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(54) **APPARATUS AND METHOD OF REACTING POLYMERS PASSING THROUGH METAL ION CHELATED RESIN MATRIX TO PRODUCE INJECTABLE MEDICAL DEVICES**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

The present disclosure relates to an apparatus and process for forming medical devices from an injectable composition. The apparatus includes a supply assembly configured to maintain and selectively dispense a first precursor and a second precursor, a mixing assembly configured to mix the first and second precursors, and at least one catalyzing element including a transition metal ion to aid in the polymerization of the first and second precursors. The process includes dispensing a volume of the first precursor and a volume of the second precursor into a mixing assembly and mixing the first and second precursors. The first and second precursors each possess a core and at least one functional group known to have click reactivity with each other. The mixed precursors are contacted with a transition metal catalyst to produce a flowable composition for use as a medical device.